

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/531,844-A
Source: IFW/B
Date Processed by STIC: 10/06/2006

ENTERED



IFW16

RAW SEQUENCE LISTING

DATE: 10/06/2006

PATENT APPLICATION: US/10/531,844A

TIME: 10:30:22

Input Set : A:\Sequence Listing - 100874-1P US.txt

Output Set: N:\CRF4\10062006\J531844A.raw

```

3 <110> APPLICANT: Jahic, Haris
4   Kern, Gunther
6 <120> TITLE OF INVENTION: Screening Assay to Identify Inhibitors of the MurD Enzyme
using
7   an Activator-Independent MurD enzyme
9 <130> FILE REFERENCE: RE: 100874-1P US
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/531,844A
C--> 11 <141> CURRENT FILING DATE: 2005-04-18
11 <150> PRIOR APPLICATION NUMBER: GB 0224997.7
12 <151> PRIOR FILING DATE: 2002-10-26
14 <150> PRIOR APPLICATION NUMBER: PCT/GB2003/004592
15 <151> PRIOR FILING DATE: 2003-10-23
17 <160> NUMBER OF SEQ ID NOS: 4
19 <170> SOFTWARE: PatentIn version 3.3
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 438
23 <212> TYPE: PRT
24 <213> ORGANISM: Escherichia coli
26 <400> SEQUENCE: 1
28 Met Ala Asp Tyr Gln Gly Lys Asn Val Val Ile Ile Gly Leu Gly Leu
29 1           5           10           15
32 Thr Gly Leu Ser Cys Val Asp Phe Phe Leu Ala Arg Gly Val Thr Pro
33           20           25           30
36 Arg Val Met Asp Thr Arg Met Thr Pro Pro Gly Leu Asp Lys Leu Pro
37           35           40           45
40 Glu Ala Val Glu Arg His Thr Gly Ser Leu Asn Asp Glu Trp Leu Met
41           50           55           60
44 Ala Ala Asp Leu Ile Val Ala Ser Pro Gly Ile Ala Leu Ala His Pro
45 65           70           75           80
48 Ser Leu Ser Ala Ala Ala Asp Ala Gly Ile Glu Ile Val Gly Asp Ile
49           85           90           95
52 Glu Leu Phe Cys Arg Glu Ala Gln Ala Pro Ile Val Ala Ile Thr Gly
53           100          105          110
56 Ser Asn Gly Lys Ser Thr Val Thr Thr Leu Val Gly Glu Met Ala Lys
57           115          120          125
60 Ala Ala Gly Val Asn Val Gly Val Gly Gly Asn Ile Gly Leu Pro Ala
61           130          135          140
64 Leu Met Leu Leu Asp Asp Glu Cys Glu Leu Tyr Val Leu Glu Leu Ser
65 145          150          155          160
68 Ser Phe Gln Leu Glu Thr Thr Ser Ser Leu Gln Ala Val Ala Ala Thr
69           165          170          175
72 Ile Leu Asn Val Thr Glu Asp His Met Asp Arg Tyr Pro Phe Gly Leu
73           180          185          190
76 Gln Gln Tyr Arg Ala Ala Lys Leu Arg Ile Tyr Glu Asn Ala Lys Val

```

RAW SEQUENCE LISTING

DATE: 10/06/2006

PATENT APPLICATION: US/10/531,844A

TIME: 10:30:22

Input Set : A:\Sequence Listing - 100874-1P US.txt

Output Set: N:\CRF4\10062006\J531844A.raw

```

77          195          200          205
80 Cys Val Val Asn Ala Asp Asp Ala Leu Thr Met Pro Ile Arg Gly Ala
81          210          215          220
84 Asp Glu Arg Cys Val Ser Phe Gly Val Asn Met Gly Asp Tyr His Leu
85 225          230          235          240
88 Asn His Gln Gln Gly Glu Thr Trp Leu Arg Val Lys Gly Glu Lys Val
89          245          250          255
92 Leu Asn Val Lys Glu Met Lys Leu Ser Gly Gln His Asn Tyr Thr Asn
93          260          265          270
96 Ala Leu Ala Ala Leu Ala Leu Ala Asp Ala Ala Gly Leu Pro Arg Ala
97          275          280          285
100 Ser Ser Leu Lys Ala Leu Thr Thr Phe Thr Gly Leu Pro His Arg Phe
101          290          295          300
104 Glu Val Val Leu Glu His Asn Gly Val Arg Trp Ile Asn Asp Ser Lys
105 305          310          315          320
108 Ala Thr Asn Val Gly Ser Thr Glu Ala Ala Leu Asn Gly Leu His Val
109          325          330          335
112 Asp Gly Thr Leu His Leu Leu Leu Gly Gly Asp Gly Lys Ser Ala Asp
113          340          345          350
116 Phe Ser Pro Leu Ala Arg Tyr Leu Asn Gly Asp Asn Val Arg Leu Tyr
117          355          360          365
120 Cys Phe Gly Arg Asp Gly Ala Gln Leu Ala Ala Leu Arg Pro Glu Val
121          370          375          380
124 Ala Glu Gln Thr Glu Thr Met Glu Gln Ala Met Arg Leu Leu Ala Pro
125 385          390          395          400
128 Arg Val Gln Pro Gly Asp Met Val Leu Leu Ser Pro Ala Cys Ala Ser
129          405          410          415
132 Leu Asp Gln Phe Lys Asn Phe Glu Gln Arg Gly Asn Glu Phe Ala Arg
133          420          425          430
136 Leu Ala Lys Glu Leu Gly
137          435
140 <210> SEQ ID NO: 2
141 <211> LENGTH: 456
142 <212> TYPE: PRT
143 <213> ORGANISM: Escherichia faecalis
145 <400> SEQUENCE: 2
147 Met Lys Lys Ile Thr Thr Tyr Gln Asn Lys Lys Val Leu Val Leu Gly
148 1          5          10          15
151 Leu Ala Lys Ser Gly Val Ser Ala Ala Lys Leu Leu His Glu Leu Gly
152          20          25          30
155 Ala Leu Val Thr Val Asn Asp Ala Lys Gln Phe Asp Gln Asn Pro Asp
156          35          40          45
159 Ala Gln Asp Leu Leu Thr Leu Gly Ile Arg Val Val Thr Gly Gly His
160          50          55          60
163 Pro Ile Glu Leu Leu Asp Glu Glu Phe Glu Leu Ile Val Lys Asn Pro
164 65          70          75          80
167 Gly Ile Leu Tyr Thr Asn Pro Leu Val Ala Glu Ala Leu Thr Arg Lys
168          85          90          95
171 Ile Pro Ile Ile Thr Glu Val Glu Leu Ala Gly Gln Ile Ala Glu Cys

```

RAW SEQUENCE LISTING

DATE: 10/06/2006

PATENT APPLICATION: US/10/531,844A

TIME: 10:30:22

Input Set : A:\Sequence Listing - 100874-1P US.txt

Output Set: N:\CRF4\10062006\J531844A.raw

```

172          100          105          110
175 Pro Ile Val Gly Ile Thr Gly Thr Asn Gly Lys Thr Thr Thr Thr
176          115          120          125
179 Met Ile Gly Leu Leu Leu Asn Ala Asp Arg Thr Ala Gly Glu Ala Arg
180          130          135          140
183 Leu Ala Gly Asn Ile Gly Phe Pro Ala Ser Thr Val Ala Gln Glu Ala
184 145          150          155          160
187 Thr Ala Lys Asp Asp Leu Val Met Glu Leu Ser Ser Phe Gln Leu Met
188          165          170          175
191 Gly Ile Glu Thr Phe His Pro Gln Ile Ala Val Ile Thr Asn Ile Phe
192          180          185          190
195 Glu Ala His Leu Asp Tyr His Gly Ser Arg Lys Glu Tyr Val Ala Ala
196          195          200          205
199 Lys Trp Ala Ile Gln Lys Asn Met Thr Ala Glu Asp Thr Leu Ile Leu
200          210          215          220
203 Asn Trp Asn Gln Val Glu Leu Gln Thr Leu Ala Lys Thr Thr Ala Ala
204 225          230          235          240
207 Asn Val Leu Pro Phe Ser Thr Lys Glu Ala Val Glu Gly Ala Tyr Leu
208          245          250          255
211 Leu Asp Gly Lys Leu Tyr Phe Asn Glu Tyr Ile Met Pro Ala Asp
212          260          265          270
215 Glu Leu Gly Ile Pro Gly Ser His Asn Ile Glu Asn Ala Leu Ala Ala
216          275          280          285
219 Ile Cys Val Pro Lys Leu Lys Asn Val Ser Asn Ala Gln Ile Lys Gln
220          290          295          300
223 Ser Leu Thr Asn Phe Ser Gly Val Pro His Arg Thr Gln Phe Val Gly
224 305          310          315          320
227 Glu Val Gln Gln Arg Arg Phe Tyr Asn Asp Ser Lys Ala Thr Asn Phe
228          325          330          335
231 Leu Ala Thr Glu Met Ala Leu Ser Gly Phe Asp Asn Gln Lys Leu Leu
232          340          345          350
235 Leu Leu Ala Gly Gly Leu Asp Arg Gly Asn Ser Phe Asp Glu Leu Val
236          355          360          365
239 Pro Ala Leu Leu Gly Leu Lys Ala Ile Val Leu Phe Gly Glu Thr Lys
240          370          375          380
243 Lys Lys Leu Ala Glu Ala Lys Lys Pro Asn Ile Glu Thr Ile Leu
244 385          390          395          400
247 Phe Ala Glu Asn Val Gln Thr Ala Val Thr Ile Ala Phe Asp Tyr Ser
248          405          410          415
251 Glu Lys Asp Asp Thr Ile Leu Leu Ser Pro Ala Cys Ala Ser Trp Asp
252          420          425          430
255 Gln Tyr Pro Asn Phe Glu Val Arg Gly Glu Ala Phe Met Gln Ala Val
256          435          440          445
259 Gln Gln Leu Lys Glu Ser Glu Met
260          450          455
263 <210> SEQ ID NO: 3
264 <211> LENGTH: 448
265 <212> TYPE: PRT
266 <213> ORGANISM: Pseudomonas aeruginosa

```

RAW SEQUENCE LISTING

DATE: 10/06/2006

PATENT APPLICATION: US/10/531,844A

TIME: 10:30:22

Input Set : A:\Sequence Listing - 100874-1P US.txt

Output Set: N:\CRF4\10062006\J531844A.raw

268 <400> SEQUENCE: 3

```

270 Met Ser Leu Ile Ala Ser Asp His Phe Arg Ile Val Val Gly Leu Gly
271 1          5          10          15
274 Lys Ser Gly Met Ser Leu Val Arg Tyr Leu Ala Arg Arg Gly Leu Pro
275          20          25          30
278 Phe Ala Val Val Asp Thr Arg Glu Asn Pro Pro Glu Leu Ala Thr Leu
279          35          40          45
282 Arg Ala Gln Tyr Pro Gln Val Glu Val Arg Cys Gly Glu Leu Asp Ala
283          50          55          60
286 Glu Phe Leu Cys Ser Ala Arg Glu Leu Tyr Val Ser Pro Gly Leu Ser
287 65          70          75          80
290 Leu Arg Thr Pro Ala Leu Val Gln Ala Ala Lys Gly Val Arg Ile
291          85          90          95
294 Ser Gly Asp Ile Asp Leu Phe Ala Arg Glu Ala Lys Ala Pro Ile Val
295          100         105         110
298 Ala Ile Thr Gly Ser Asn Ala Lys Ser Thr Val Thr Thr Leu Val Gly
299          115         120         125
302 Glu Met Ala Val Ala Ala Asp Lys Arg Val Ala Val Gly Gly Asn Leu
303          130         135         140
306 Gly Thr Pro Ala Leu Asp Leu Leu Ala Asp Asp Ile Glu Leu Tyr Val
307 145          150         155         160
310 Leu Glu Leu Ser Ser Phe Gln Leu Glu Thr Cys Asp Arg Leu Asn Ala
311          165         170         175
314 Glu Val Ala Thr Val Leu Asn Val Ser Glu Asp His Met Asp Arg Tyr
315          180         185         190
318 Asp Gly Met Ala Asp Tyr His Leu Ala Lys His Arg Ile Phe Arg Gly
319          195         200         205
322 Ala Arg Gln Val Val Val Asn Arg Ala Asp Ala Leu Thr Arg Pro Leu
323          210         215         220
326 Ile Ala Asp Thr Val Pro Cys Trp Ser Phe Gly Leu Asn Lys Pro Asp
327 225          230         235         240
330 Phe Lys Ala Phe Gly Leu Ile Glu Glu Asp Gly Gln Lys Trp Leu Ala
331          245         250         255
334 Phe Gln Phe Asp Lys Leu Leu Pro Val Gly Glu Leu Lys Ile Arg Gly
335          260         265         270
338 Ala His Asn Tyr Ser Asn Ala Leu Ala Ala Leu Ala Leu Gly His Ala
339          275         280         285
342 Val Gly Leu Pro Phe Asp Ala Met Leu Gly Ala Leu Lys Ala Phe Ser
343          290         295         300
346 Gly Leu Ala His Arg Cys Gln Trp Val Arg Glu Arg Gln Gly Val Ser
347 305          310         315         320
350 Tyr Tyr Asp Asp Ser Lys Ala Thr Asn Val Gly Ala Ala Leu Ala Ala
351          325         330         335
354 Ile Glu Gly Leu Gly Ala Asp Ile Asp Gly Lys Leu Val Leu Leu Ala
355          340         345         350
358 Gly Gly Asp Gly Lys Gly Ala Asp Phe His Asp Leu Arg Glu Pro Val
359          355         360         365
362 Ala Arg Phe Cys Arg Ala Val Leu Leu Gly Arg Asp Ala Gly Leu
363          370         375         380

```

RAW SEQUENCE LISTING

DATE: 10/06/2006

PATENT APPLICATION: US/10/531,844A

TIME: 10:30:22

Input Set : A:\Sequence Listing - 100874-1P US.txt

Output Set: N:\CRF4\10062006\J531844A.raw

```

366 Ile Ala Gln Ala Leu Gly Asn Ala Val Pro Leu Val Arg Val Ala Thr
367 385          390          395          400
370 Leu Asp Glu Ala Val Arg Gln Ala Ala Glu Leu Ala Arg Glu Gly Asp
371          405          410          415
374 Ala Val Leu Leu Ser Pro Ala Cys Ala Ser Leu Asp Met Phe Lys Asn
375          420          425          430
378 Phe Glu Glu Arg Gly Arg Leu Phe Ala Lys Ala Val Glu Glu Leu Ala
379          435          440          445
382 <210> SEQ ID NO: 4
383 <211> LENGTH: 449
384 <212> TYPE: PRT
385 <213> ORGANISM: Staphylococcus aureus
387 <400> SEQUENCE: 4
389 Met Leu Asn Tyr Thr Gly Leu Glu Asn Lys Asn Val Leu Val Val Gly
390 1          5          10          15
393 Leu Ala Lys Ser Gly Tyr Glu Ala Ala Lys Leu Leu Ser Lys Leu Gly
394          20          25          30
397 Ala Asn Val Thr Val Asn Asp Gly Lys Asp Leu Ser Gln Asp Ala His
398          35          40          45
401 Ala Lys Asp Leu Glu Ser Met Gly Ile Ser Val Val Ser Gly Ser His
402          50          55          60
405 Pro Leu Thr Leu Leu Asp Asn Asn Pro Ile Ile Val Lys Asn Pro Gly
406 65          70          75          80
409 Ile Pro Tyr Thr Val Ser Ile Ile Asp Glu Ala Val Lys Arg Gly Leu
410          85          90          95
413 Lys Ile Leu Thr Glu Val Glu Leu Ser Tyr Leu Ile Ser Glu Ala Pro
414          100         105         110
417 Ile Ile Ala Val Thr Gly Thr Asn Gly Lys Thr Thr Val Thr Ser Leu
418          115         120         125
421 Ile Gly Asp Met Phe Lys Lys Ser Arg Leu Thr Gly Arg Leu Ser Gly
422          130         135         140
425 Asn Ile Gly Tyr Val Ala Ser Lys Val Ala Gln Glu Val Lys Pro Thr
426 145         150         155         160
429 Asp Tyr Leu Val Thr Glu Leu Ser Ser Phe Gln Leu Leu Gly Ile Glu
430          165         170         175
433 Lys Tyr Lys Pro His Ile Ala Ile Ile Thr Asn Ile Tyr Ser Ala His
434          180         185         190
437 Leu Asp Tyr His Glu Asn Leu Glu Asn Tyr Gln Asn Ala Lys Lys Gln
438          195         200         205
441 Ile Tyr Lys Asn Gln Thr Glu Glu Asp Tyr Leu Ile Cys Asn Tyr His
442          210         215         220
445 Gln Arg Gln Val Ile Glu Ser Glu Glu Leu Lys Ala Lys Thr Leu Tyr
446 225         230         235         240
449 Phe Ser Thr Gln Gln Glu Val Asp Gly Ile Tyr Ile Lys Asp Gly Phe
450          245         250         255
453 Ile Val Tyr Lys Gly Val Arg Ile Ile Asn Thr Glu Asp Leu Val Leu
454          260         265         270
457 Pro Gly Glu His Asn Leu Glu Asn Ile Leu Ala Ala Val Leu Ala Cys
458          275         280         285

```

VERIFICATION SUMMARY

DATE: 10/06/2006

PATENT APPLICATION: US/10/531,844A

TIME: 10:30:23

Input Set : A:\Sequence Listing - 100874-1P US.txt

Output Set: N:\CRF4\10062006\J531844A.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date